# РАЗДЕЛ III. СОЦИАЛЬНО-ЭКОНОМИЧЕСКИЕ КОММУНИКАЦИИ 

ABIGAIL LYNN THOMPSON

# HOW DOES FEMALE POLITICAL PARTICIPATION AT THE PARLIAMENTARY LEVEL AFFECT STATE ACTIONS? 

M.A. Applied Economics (University of Alabama, 2016), May 2016 Advisor: Dr. Le Wang, Ph.D., University of Oklahoma

This paper investigates if and how women's political participation, represented by the proportion of women in a state parliament, impacts state actions, such as spending on public health exportation of high-technology.The economics of this question involve an integral consideration of sociology. I hypothesized that the incentives of women and men often vary markedly, and that these variations may result in different decisions made at the state level. My reasoning lay primarily in my foundational belief about basic socialization. While I had to be careful to avoid stereotyping men into the box of "protector" and women into the box of "nurturer," I did assert that women and men often have very different socializations. These different socializations then translate into different priorities, these different priorities translate into different perceived incentives during the decision-making process, and these different incentives translate into different decisions.

## The Data

The panel data used in this research consisted of fifteen dependent variables, one independent variable, and two descriptive variables. The data was downloaded from the World Bank's World Development Indicators Database, and totals 3, 216 observations from 1997 to 2001, 2004 to 2013.

The two descriptive variables are identifiers, one for country ( $C C$ ) and one for year (Year).The one independent variable,POSHBW, denotes the proportion of seats held by women in a national parliament, as a percentage of all members of that national parliament, and is collected by the Inter-Parliamentary Union (IPU). It averages $15.39 \%$, with a median of $13 \%$ and a variance of $111.87 \%$ within the data. The data is skewed to the right, unsurprisingly - women comprise quite low proportions of national parliaments, even after the inception and promotion of women's rights.

The fifteen independent variables consist of various measurements of parliamentary action, such as spending on military, education, and clean energy. Each variable is compiled, estimated, and computed by the World Bank according to data, valuations, and other general statistics taken from global research institutions or data-collecting agencies, such as the UNESCO Institute for Statistics or the World Bank's national accounts data files.

## The Model

To prepare the data for econometric analysis within Base SAS and SAS Enterprise Miner, the necessary deletions, imputations, re-codings, and format conversations were conducted. Furthermore, 230 dummy variables were created to be used throughout econometric analysis, and controlled for every country and every year. For each regression, one dummy variable for both year and country were left out to ensure the absence of multi-collinearity in the regression.

The model consists of 285 simple linear regressions, run in SAS on the following equation:

$$
\ldots \quad \beta 1+\quad \beta 2 \text { POSHBW }+\beta 3\{\text { DummyVariable } \quad \# 1\}+\cdots+
$$ $\beta 232\{$ DummyVariable \#230\}+ $\varepsilon$

Linear regressions were used to obtain parameter estimates for the independent variable, POSHBW's, effect on the dependent variables. Regressions were run for the effect of POSHBW on each of the 15 dependent variables overall, according to seven different geographical regions, to five different wealth classifications, for three major countries, and for the trade partners of three major countries.

## The Results

All variables, dependent and independent, are in percentage form. Thus the POSHBW parameter estimates are very easy to interpret - for an increase of $1 \%$ in the proportion of women in a national parliament, the dependent variable increases/decreases by the percentage change value of the $\operatorname{POSHBW}$ parameter estimate. The significance of this increase or decrease is given by the corresponding $p$ value.

Out of the 285 parameter estimates for POSHBW, 110 of them are significant at the $5 \%$ level. All fifteen dependent variables were found to be significant in at least some way.

| Level of <br> Significance | Dependent Variable | \# Positive Significant <br> Parameter Estimates/\# <br> Significant Parameter <br> Estimates | Predominant Direction of <br> Relationship |
| :---: | :---: | :---: | :---: |
| High (12\%) | ASEE (Education) | $12 / 13$ | Positive |
| High (9\%) | HEPO (Health) | $9 / 10$ | Positive |
| High (9\%) | ASNR (Natural Resource | $1 / 10$ | Negative |
| Depletion) | $6 / 9$ | Not clear (leans positive) |  |
| High (8\%) | ASCD (CO2 Damage) | $5 / 8$ | Not clear (leans positive) |
| $(7 \%)$ | ASCO (Consumption) | $6 / 8$ | Positive |
| $(7 \%)$ | ASGS (Gross Saving) | $3 / 8$ | Negative |
| $(7 \%)$ | ASED (Energy Depletion) | $5 / 8$ | $3 / 7$ |
| $(7 \%)$ | ASMD (Mineral Depletion) | $2 / 7$ | Not clear (leans positive) |
| $(6 \%)$ | MEOG (Military) | Not clear (leans negative) |  |
| $(6 \%)$ | HTEOM (High-tech | Exports) | $5 / 6$ |
| Pegative |  |  |  |
| $(6 \%)$ | ASNE (Clean Energy) | $1 / 5$ | Positive |
| $(5 \%)$ | FDIN (FDI) | $1 / 5$ | Negative |
| Low (5\%) | ASNFD (Forest Depletion) | $3 / 5$ | Negative |
| Low (5\%) | TOGNTGZ (Trade) | $0 / 1$ | Not clear (leans positive) |
| Low (1\%) | GGFC (Consumption) | Not clear (leans negative) |  |

The most significant relationships established were the positive relationship between women's participation and education spending, the positive relationship between women's participation and health spending, the negative relationship between women's participation and natural resource depletion, and an unclear (but possibly positive) relationship between women's participation and CO2 damage. These first three results are not surprising, and fall in line with my hypothesis - I would expect women to prioritize education and health more than other issues, and indeed, it appears that they do. This hypothesis is upheld, and these results do indeed indicate that women's increased political participation leads to more spending on health and education.

Conversely, I would expect women to be averse to harming the environment, and favorable towards measures conserving the environment, such as spending on clean energy. However, this hypothesis is not completely upheld. One of the most significant relationships was the dubious, but possibly positive, relationship between CO2 damage and women's participation - if women prioritize the environment, this would be negative. The relationship between Mineral Depletion and women's participation is similar in that it is unclear but slightly positive, however it is less significant. The negative relationship between natural resource depletion and women's participation, as well as less significant negative relationships like those between women's participation and energy depletion, as well as forest depletion would fall in line with this hypothesis. Thus my hypothesis regarding women's relatively high prioritization of the environment is not upheld, and any conclusions as to the effects are dubious.

Any conclusion on women's overall spending habits cannot be drawn from this paper. There are two dependent variables that represent overall consumption, ASCO and GGFC, but neither is significant or shows a clear relationship, and ASCO leans positive while $G G F C$ leans negative. There is a negative overall relationship

| Label | POSHBW Parameter | P value |
| :--- | ---: | ---: |
| Health Expenditure, public (\% of total health expenditure) | 0.02171 | 0.00010 |
| Adjusted Savings: Gross Saving (\% of GNI) | 0.12372 | 0.00020 |
| Adjusted Savings: Energy Depletion (\% of GNI) | 0.02022 | 0.00040 |
| Adjusted Savings: Carbon Dioxide Damage (\% of GNI) | 0.00521 | 0.00260 |
| Adjusted Savings: Net Forest Depletion (\% of GNI) | -0.01749 | 0.01150 |
| Foreign Direct Investment, net inflows (\% of GDP) | -0.08672 | 0.01230 |
| Military Expenditures (\% of GDP) | -0.01406 | 0.01950 |
| Alternative and Nuclear Energy (\% of Total Energy Use) | -0.04937 | 0.02940 |
| Trade (\% of GDP) | 0.13249 | 0.12171 |
| Adjusted Savings: Education Expenditure (\% of GNI) | -0.02503 | 0.23170 |
| Adjusted Savings: Mineral Depletion (\% of GNI) | -0.00632 | 0.31710 |
| Adjusted Savings: Consumption of Fixed Capital (\% of GNI) | 0.00343 | 0.67010 |
| High-technology exports (\% of manufactured exports) | 0.01026 | 0.69210 |
| General Government Final Consumption Expenditure (annual \% growth) | -0.03400 | 0.76730 |
| Adjusted Savings: Natural Resources Depletion (\% of GNI) | $\mathbf{- 0 . 0 0 1 6 0}$ | 0.92610 |
|  |  |  |

Image 2: Summary of 1110 SignificantPOSHBW Pa-
between high-tech exports and women's participation, indicating that women prioritize technology less than other things. Furthermore, the relationship between women's participation and military spending, while slightly negative, is not clear, and thus does not completely validate my hypothesis that women would indisputably prioritize military spending very low. Women's participation has a positive relationship with saving, indicating that women may prioritize saving money more than men.

Note that there are 18 different classifications in which regressions were conducted, apart from an overall regression to determine significance. It appears that the most significant results of these regressions were found in the USA (10\%), High Income (OECD) countries (7\%), and Upper Middle Income countries (7\%). The least significant results were High Income countries (nonOECD), China (1\%), and South Asia (3\%).

The results of this model vary in their conclusiveness. The following constitute main implications from the overall significance and direction of aggregate model results. The increased presence of women in a given parliamentary system leads to:

- Increased spending on education and public health.
- Decreases in natural resource and energy depletion, and increases in clean energy uses.
- Dubious effects on the amount of CO2 damage, state consumption, mineral depletion, military spending, and trade.
- Increases in gross saving.
- Decrease export of high-technology.
- Increased investment by other countries.

These results are particularly prevalent in countries that are richer and more allied with the USA, and the most significant results correspond to the relationships between women's political participation and education and health expenditures.


Image 3: Summary of Significant $P O S H B W$ Parameters

## Conclusion

The overall aim of this research was to discover possible nuances behind decision-making at the state level, and this paper has succeeded in scratching the surface of this highly complex area of study. Women may prioritize education and public health, as well as saving. On the flip side, women may prioritize conserving the environment, and thus work to decrease energy depletion and to increase the usage of clean energy. Women also appear to have a negative relationship with exports of high-technology, perhaps out of a desire to keep assets within the borders of their countries. These trends are all more marked in countries that are richer and show signs of democratization, evidenced by the more pronounced existence of these trends when tested within classifications that reflect a closer proximity, in some way, to the United States. Accordingly, the conclusion of this model could be put as follows: stereotypes concerning the female proclivity to prioritize health, education, and the environment, all things that could be termed to reflect a need to nurture and protect, are proven well-founded.

However, these inferences are largely sociological with an economic emphasis, and individuals must be careful to avoid stereotypes when continuing down this road. It is also important to caution that the independent variable within this model, the proportion of seats held by women in a national parliament, may be only a highly-correlated indicator of some unknown real independent variable, not the actual causation of these observed trends in state-level decision-making.

I will end with one final thought: while this model may be very ambitious and very comprehensive, the results of this research, and of any research like it, are important. Essential to understanding how the decisions that impact individuals' everyday lives are made is an understanding of the incentives and priorities of those who make these decisions, and women increasingly constitute a substantial component of that population. Thus studies like this one, which attempt to find underlying sociological and economic motives, need to continue to be pursued in a very real way.

